

### CLAIMS

What is claimed is:

1. A plate joiner, comprising:
  - a plunge cutting element, for plunge cutting a recess in a surface included in a workpiece;
  - a rear fence, adjustably positionable along an axis generally perpendicular to the plunge cutting element; and
  - a workpiece positioning system including:
    - a front fence pivotally coupled to said rear fence, said front fence being configured and arranged so as to position the cutting element with respect to a side of the workpiece adjacent the surface of the workpiece into which a plunge cut is to be made; and
    - an angular adjustment system pivotally coupled to said front fence, for adjustably fixing the angular relation of said front fence with respect to said rear fence;wherein the angular adjustment system permits angular adjustment of said front fence greater than 90°(degrees) from the surface of the workpiece into which a recess is to be made.
2. The plate joiner of claim 1, wherein the angular adjustment system is adjustable in the range of about 0° (zero degrees) through about 135° (degrees).
3. The plate joiner of claim 1, wherein the angular adjustment system includes an angled segment member including a first arcuate slot for positioning said front fence member in the range of between about 0° (zero degrees) and about 90°(degrees) and a second arcuate slot for positioning said front fence from between 90°(degrees) and 135° (degrees) from the surface of the workpiece into which a recess is to be made.
4. The plate joiner of claim 3, wherein the angled segment member slidably engages said rear fence.
5. The plate joiner of claim 3, wherein the first and the second arcuate slots individually include a positive stop for positioning said front fence at 90°(degrees) with respect to the surface of the workpiece into which a recess is to be made.
6. The plate joiner of claim 1, wherein the angular adjustment system includes a locking mechanism for fixedly securing the angular position of said front fence.
7. The plate joiner of claim 6, wherein the locking mechanism is a knob threadly connected to a pin extending from said rear fence for fixedly securing the angular position of said front fence.

8. The plate joiner of claim 1, wherein the angular adjustment system is configured to include a positive stop at 90°(degrees).
9. The plate joiner of claim 1, wherein the angular adjustment system is configured to include a positive stop at 135°(degrees).
10. The plate joiner of claim 1, wherein the pivotal connection between said front fence and said rear fence is a trunnion member.
11. The plate joiner of claim 1, wherein the angle adjustment system is configured and arranged to provide a positive stop at one or more front fence angles.

12. A plate joiner, comprising:
  - a plunge cutting element, for plunge cutting a recess in a surface included in a workpiece;
  - a rear fence, being adjustably positionable along an axis generally perpendicular to the plunge cutting element; and
  - a workpiece positioning system including:
    - a front fence pivotally coupled to said rear fence, said front fence being configured and arranged so as to position the cutting element with respect to a side of the workpiece adjacent the surface into which a plunge cut is to be made; and
    - an angular adjustment system including an angled segment member having a first arcuate slot for positioning said front fence member in the range of between about 0° (zero degrees) and about 90°(degrees) and a second arcuate slot for positioning said front fence from between about 90°(degrees) and about 135° (degrees), said angular adjustment system being pivotally coupled to said front fence, for adjustably fixing the angular relation of said front fence with respect to the surface of the workpiece into which a recess is to be made.
13. The plate joiner of claim 12, wherein the angled segment member slidably engages said rear fence.
14. The plate joiner of claim 12, wherein the first and the second arcuate slots individually include a positive stop for positioning said front fence at 90°(degrees) with respect to the surface of the workpiece into which a recess is to be made.
15. The plate joiner of claim 12, wherein the angular adjustment system includes a locking mechanism for fixedly securing the angular position of said front fence.
16. The plate joiner of claim 15, wherein the locking mechanism is a knob threadly connected to a pin extending from the rear fence for fixedly securing the angular position of said front fence.
17. The plate joiner of claim 12, wherein the angular adjustment system is configured to include a positive stop at 90°(degrees).
18. The plate joiner of claim 12, wherein the angular adjustment system is configured to include a positive stop at 135°(degrees).
19. The plate joiner of claim 12, wherein the pivotal connection between said front fence and said rear fence is a trunnion member.
20. The plate joiner of claim 12, wherein the angle adjustment system is configured and arranged to provide a positive stop at one or more front fence angles.

21. A plate joiner, comprising:  
a plunge cutting element, for plunge cutting a recess in a surface included in a workpiece; and  
means for angularly positioning the cutting element with respect to a workpiece such that the distance from a side of the workpiece adjacent the surface into which a plunge cut is to be made and the cutting element remains substantially constant with angular variation;  
wherein the angular positioning means permits angular adjustment greater than 90°(degrees) from between the adjacent surface of the workpiece and an axis generally parallel from the surface of the workpiece into which a recess is to be made.